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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,487	07/20/2001	Willard K. McClintock	26608-1	2572

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EXAMINER

ANDREWS, MELVYN J

ART UNIT	PAPER NUMBER
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1742

DATE MAILED: 07/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,487

Applicant(s)

MCCLINTOCK ET AL.

Examiner

Melvyn J. Andrews

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20, 22-27 and 30-32 is/are pending in the application.
- 4a) Of the above claim(s) 8-20, 22-25, 31 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 26, 27 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 71604.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Claims 8 to 20, 22, 31 and 32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on May 13, 2004.

Applicant's election with traverse of Group I in the reply filed on May 13, 2004 is acknowledged. The traversal is on the ground(s) that set forth in reply of May 13, 2004. This is not found persuasive because for the reasons set forth below: Applicants have not denied that the steel processing material of Group I does not have other uses.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1 to 7, 26, 27 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The expressions Furnace Exhaust Material (FEM) and Post Combustion Material (PCM) are not clearly

defined in the specification. It is unclear how these materials relate to each other. The response states that "Furnace Exhaust Material (FEM) is generated from the post combustion chamber as Post Combustion Material (PCM or bag house dust". This means that (FEM) is (PCM) ,as well as bag house dust. It is not understood why three expressions are used for the same material . The use of a confusing variety of terms for the same thing should not be permitted MPEP 608.01(o).

Applicants should explain the relationships of the materials FEM and PCM. The explanation of May 13, 2004 is confusing. Is there a publication which defines each of these materials FEM and PCM ? Also is there a publication which defines how these materials are related?

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 to 7, 26, 27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Calderon et al (US 6,214,085) in view of Lehner et al (US 5,853,453) Calderon discloses a method for direct steelmaking including the step of pneumatically injecting a fluxed iron/carbon product with immediate foaming of the slag (col. 8, lines 28 to 33) the iron/carbon product having been made by mixing iron ore concentrate, coal and dolomitic limestone (col.7, line 37 to col.8, line 2) a materials feeding system feeds materials into hopper 14 these materials comprise iron ore such as iron ore concentrate and other iron bearing materials such as effluent dust and scale, these

materials may also be dried prior to delivery to hopper 14 (col. 3, lines 44 to 59) which results in a steel processing material as in Claim 1.

With respect to Claims 1, 26, 27 and 30 all may contain PCM. Also the process limitations in Claims 26 and 30 do not further limit the composition of PCM.

With respect to Claim 2 Calderon does not explicitly disclose the concentrations of the coal and flux, such as dolomite in the fluxed iron/carbon product which is pneumatically injected into the furnace with immediate foaming but it would be obvious to modify the composition in order to achieve immediate foaming within the furnace which may be determined by routine experimentation since Calderon recognizes concentrations to be a result-effective variable . In re Boesch 205 USPQ 215.

With respect to Claims 3 and 7 Calderon does not explicitly disclose the concentration of the iron bearing materials such as "effluent dust" but it would be obvious to determine the optimum concentration as a source of iron suitable for recycling by routine experimentation since Calderon recognizes concentrations to be a result-effective variable . In re Boesch 205 USPQ 215.

With respect to Claims 4, Calderon et al does not disclose the water content of the mix but Lehner et al discloses dehydrated granules formed from sludge may advantageously contain a residual moisture of a maximum of 5 wt. % free water to be used in a converter so that it would have been obvious to one of ordinary skill in the art at the time the invention was made to form a material with a low amount of water in order to provide sufficiently high strength particle for use in a converter since Lehner et

al recognizes that moisture content is a result effective variable. In re Boesch 205 USPQ 215.

With respect to Claims 5 and 6 the Calderon mixture is pneumatically injected so that the Calderon mixture would be expected to be of an injectable size which may be determined by routine experimentation since Calderon recognizes that the size of the mixture must be suitable for injection or a result-effective variable In re Boesch 205 USPQ 215.

With respect to Claim 7 the concentration of the iron in the Calderon "effluent dust" would be expected to be similar to any iron-bearing material from the exhaust of a steel making furnace since the Calderon "effluent dust " contains an iron concentration suitable for recycling which is recognized by Calderon to be a result effective variable In re Boesch 205 USPQ 215

Response to Arguments

Applicant's arguments filed February 21, 2003 have been fully considered but they are not persuasive. Applicants argument that the claimed PCM is described in the specification on page 1, lines 12 to 13 is not well taken because the specification also describes on page 5, lines 16 to 19 that "the term "post combustion material" as used in this invention should be understood to cover any iron-bearing material from the exhaust of a steel making furnace ". The PCM of Claim 1 is not limited to material from a drop out box as argued. It is noted that no evidence has been provided that EPA acknowledges drop out box materials as a term of art. The examiner does not agree

that the term "drop out box materials " is limited to a specific size, concentration or moisture content and does not categorically differ from Calderon "effluent dust".

With respect to Lehner applicants arguments are not persuasive of error because Lehner discloses working up any iron-containing dust residual substances collected using a wet process to form sludges which are dehydrated in order to form granulates which are recycled to a steel production process the motivation to combine Lehner with Caldreon is optimize the moisture content of the Calderon mixture to pneumatically fed into the furnace. Applicants motivations listed in paper No.10, page 13 have been noted but none of these reasons are claimed. With respect to the size of the mixture Calderon discloses that the mixture is pneumatically injected so that the determination of size. would be well within the skill of the art since size would be a result effective variable.

Applicants' arguments filed November 17, 2003 have been fully considered but they are not persuasive.

With respect to arguments on page 7 concerning Calderon it is noted that the iron oxide, effluent dust and scale are equivalent to (PCM) in so far as it is understood. The size of the claimed (PCM) does not differ from the Claderon iron-bearing materials.

With respect to the arguments on page 8 changing "post combustion material " to "furnace exhaust material" does not clearly define or differentiate the PCM from the FEM.

Applicants arguments with respect to EPA regulations distinguishing between "baghouse dust" and "drop-out box material" are not well taken because no evidence has been presented and certainly no evidence has been presented that the EPA defines (FEM) and (PCM) if so please supply it to facilitate the prosecution of this application.

Applicants' arguments on page 9 concerning the New Steel article have been noted but (PCM) is still not defined.

Applicants' arguments on page 10 that the moisture content of PCM differs from baghouse dust is not well taken because the PCM if it contains less than about 2% water includes zero which apparently does not differ from dry baghouse dust. Also the PCM has a maximum particle size not greater than 5/16 of an inch which includes all sizes below 5/16 of an inch but "chunk size" is not defined.

With respect to the applicants arguments on page 11 are not well taken because Calderon does recycle an iron containing mixture..

With respect to applicants' arguments on page 12 with respect to "strength" are not persuasive or error because "strength" is not claimed.


Applicant's arguments filed May 13, 2004 have been fully considered but they are not persuasive. Finally if as argued by applicants the "PCM comprises particles that are too heavy or too large to be exhausted to a bag house" then what is the source of the PCM if not Furnace Exhaust Material (FEM) which is certainly from exhaust which contains particles that are not so large that they cannot be exhausted.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvyn J. Andrews whose telephone number is (571)272-1239. The examiner can normally be reached on 8:00A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on (571)272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


MELVYN ANDREWS
PRIMARY EXAMINER

mja
July 16.2004